

INTERFACE A JOYSTICK TO YOUR TS-1000 OR ZX81

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One of my great passions with my ZX81 and TS-1000 computers has been the many hardware projects that can be easily and inexpensively built for them. The following project was inspired by an article from the July edition of Sync magazine.

Many of the ZX programs use the unsifted arrow keys to direct cursor movements. This project will actually connect a joystick to the arrow keys (5,6,7,8 & 0). There are two parts to this project, the first part will install the joystick port. The second part will modify the the joystick.

The following parts are required for this project:

1. One DB-9 connector
2. One Joystick (Radio Shack Part No. 270-1711)
3. Approx three feet of stranded wire
4. Solering iron and solder
5. One exacto knife

The easiest part of this project is actually installing the joystick port. If you have moved your TS-1000 motherboard into another case (as I have), finding a place to mount the joystick port should pose no problem. Select you location and draw a rough outline of the port there. Cut out the outline and mount the DB-9 connector there. Using figures 1 & 2 as guides, solder six wires from the DB-9 connector to the TS-1000's keyboard connectors on the underside (non-component) of the TS-1000 motherboard. If you still have a virgin TS-1000, there isn't muct room, so you may choose to have the wires for the port exit through a hole drilled in the side of the computer where the joystick port will stand alone without being mounted.

For the joystick I used a Coleco joystick which I bought for \$2.95 at Radio Shack. Other joysticks can be used. I just like this one because it's cheap. First, open up the joystick case by removing the five screws on the underside of the joystick. Actually, four of the screws hold the case together abd the fifth on holds the printed circuit board to the bottom of the case. Remove the printed circuit board and turn it over so that the underside (non component side) is visable. Using an exacto knife, cut the D4 run as shown in figure 3. Using the stranded wire, make three wire jumpers and solder them to the printed circuit board in the locations illustrated in figure 3. Reassemble the joystick.

To test your joystick, plug it into your TS-1000 joystick port and apply power to your system. By moving the joystick around and pressing the FIRE button, you should get the indications listed in the table below.

RIGHT - 8
UP - 7
DOWN - 6
FIRE - 0